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BREAST CANCER: BETTER CARE FOR LESS COST

Is It Possible?

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Abstract

Objectives: To estimate the potential for cost reduction in the acute care setting and the required investment in the home care setting of implementing an outpatient/early discharge strategy for operable (stages I and II) breast cancer in Canada.
Methods: Data from a community hospital were augmented by expert knowledge and incorporated into the breast cancer submodel of Statistics Canada's Population Health Model. For the estimated 90% of patients for whom this approach was assumed to be appropriate, the resource utilization for outpatient breast-conserving surgery and 2 days of hospitalization for those women undergoing mastectomy was quantified and costed, as were the appropriate home care services. A 5% readmission rate for complications was assumed. Cost per case, total cost burden, investment in home care, savings in acute care, and net savings were calculated. Sensitivity analyses were performed around readmission rates and home care/surgical follow-up costs. All costs were determined in 1995 Canadian dollars.
Results: The cost of initial treatment for the 15,399 women diagnosed with stages I and II breast cancer in 1995 in Canada was estimated to be $127.6 million. Hospitalization made up 53% of these costs. Under the outpatient/early discharge strategy, the acute care cost of initial breast cancer management

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could be reduced by $47.2 million, with an investment in home care of $14.5 million ($453 per patient), resulting in an overall net saving of $33 million. Under this strategy, hospitalization would contribute only 21% to the total care cost.
Conclusions: If Canadian surgeons and healthcare administrators were to work together to put in place processes to support ambulatory breast cancer surgery and if resources were redirected to the provision of home-based post-operative care, there would be potential for a large net healthcare saving and preservation of high-quality patient care.

Keywords: Breast cancer, Ambulatory surgery, Breast-conserving surgery, Mastectomy, Home-based care

As the Canadian healthcare system confronts increasing numbers of patients and complexity of care, there is growing pressure to maximize the efficiency and quality of healthcare delivery. In order to do so, it may sometimes be necessary to invest in the community or home care setting in order to relieve the pressure on the acute care hospital sector and to provide the quality of care that patients are seeking. A shift in resources cannot be improvised, and the potential impact of such changes on patients and the healthcare delivery system must be carefully evaluated.

Breast cancer is the most frequent malignancy affecting Canadian women. For early stage (stages I and II) breast cancer, current Canadian treatment practice involves either breast-conserving surgery (BCS) or mastectomy (M), depending on tumor and breast size, patient age, personal preference, and other factors. Both surgical procedures are still commonly done as inpatient procedures with variable lengths of hospital stay. However, it has been well documented for many years that BCS can be undertaken on an ambulatory basis, and that postoperative recovery from mastectomy generally requires hospitalization of only a few days duration, if patients are provided with appropriate home care support (3;4;6;7;8;9;11;16).

Ambulatory surgery or short stay post-mastectomy hospitalization has generally been associated with a high level of patient satisfaction (4;7;8;11;17). In this article, we estimate the potential cost impact on the acute care and home care sectors of reducing the length of hospital stay to benchmark levels following surgery for operable (stages I and II) breast cancer. This analysis provides an estimate of the total amount of resources required for ambulatory BCS and reduced length of stay for mastectomy, but does not address the issues associated with the transition from one system to another.

METHODS

The breast cancer submodel of Statistic Canada's Population Health Model (POHEM) was developed in collaboration with oncologists from the Ottawa Regional Cancer Centre and allows for the estimation of the initial treatment (19) and total lifetime costs of managing all stages of breast cancer (18) in the Canadian healthcare system.

POHEM is a microsimulation model that synthesizes Canadian treatment practices and their outcomes into an analytical framework. In brief, POHEM assigns a stage of breast cancer to each patient in the simulated population. It then assigns treatment, disease progression, and survival appropriate for the stage of breast cancer. The model also incorporates Canadian costs according to the various treatment options. Data on treatment practices, costs, disease progression, and survival were obtained from a variety of Canadian data sources, which are listed in Table 1.

Data from the Renfrew Victoria Hospital, a 50-bed community hospital located in eastern Ontario, were augmented by expert opinion and incorporated into the breast cancer

Table 1. List of Data Requirements and Sources

Data required	Data sources
Incidence of breast cancer	Canadian Cancer Registry, 1995 (Women)
Risk factors	National Breast Screening Study
	Provincial Heart Health Surveys
Stage at diagnosis	Saskatchewan Cancer Foundation—1993[a]
	Manitoba Medical Services Foundation and Manitoba Cancer Treatment and Research Foundation—1990
Standard diagnostic work-up	Saskatchewan Cancer Foundation—1993
	Surveys of Canadian Oncologists—1994
	Breast Cancer Experts[b]
Therapeutic algorithms at initial diagnosis	Saskatchewan Cancer Foundation—1993
	Surveys of Canadian Oncologists—1994
	Manitoba Medical Services Foundation and Manitoba Cancer Treatment and Research Foundation—1990
	Breast Cancer Experts
Follow-up after initial treatment	Surveys of Canadian Oncologists—1994
	Breast Cancer Experts
Diagnosis and treatment of recurrent or metastatic disease	Saskatchewan Cancer Foundation—Special Chart Reviews, 1985–92
	Ottawa Regional Cancer Centre—Special Chart Reviews, 1996–97
Survival data	Northern Alberta Breast Cancer Registry—1971–88
	Saskatchewan Cancer Foundation—Special Chart Reviews, 1985–92
	British Columbia Cancer Agency—1989–94
Fees for physicians' services, diagnostic and surgical tests and procedures	Ontario Fee Schedule—1995 (reliability verified by Canadian Institute for Health Information)
Hospital per diem rates by case mix groups	Ontario Case Cost Project—1993–95
Hospital per diem rate for terminal care	Results of 1988 National Cancer Institute of Canada Clinical Trial—BR5 (updated with Consumer Price Index)
	Ontario Case Cost Project—1993–95
Hospital length of stay	Statistics Canada's National Person-oriented
	Database of Hospital Discharges (POD)—1992–94
	Ottawa General Hospital
Radiotherapy costs	Ottawa Regional Cancer Centre—1997
Chemotherapy costs—drugs and administration	Ottawa Civic Hospital—1995
	Ottawa General Hospital—1995
Facility overhead costs	Results of 1988 NCIC Clinical Trial—BR5 (updated with Consumer Price Index)
Hormonal therapy costs	Ottawa Pharmacies
Monthly costs of ongoing care	Manitoba Health Services Insurance Plan
	Statistics Canada's POD—1992–94
	Ontario Case Cost Project—1993–95
Terminal care costs	Manitoba Health Services Insurance Plan
	Statistics Canada's POD—1992–94
	Ontario Case Cost Project—1993–95

Where information was not directly available from a national or provincial database, information was obtained from literature reviews or from breast cancer experts.
[a] Special chart reviews of all patients diagnosed in 1993.
[b] 1994 Surveys of Canadian medical, surgical, and radiation oncologists.

submodel of POHEM (20) to evaluate the economic impact of a shift to ambulatory BCS and 2-day hospitalization for mastectomy. The costs associated with the transition from current practice to ambulatory or reduced length of stay surgery (e.g., expansion of surgical day care, etc.) were not included in this analysis.

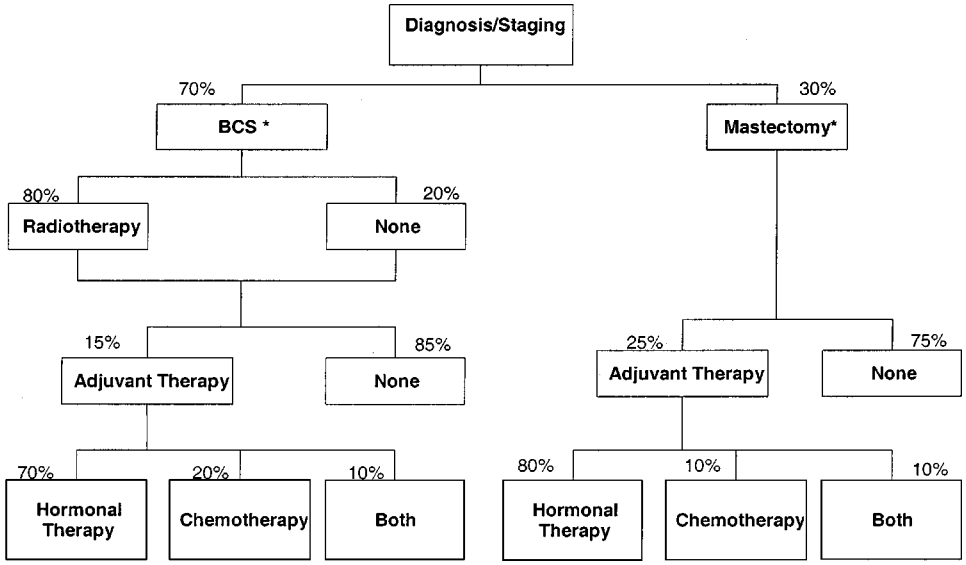

Figure 1. Treatment algorithm for women aged 50 and older with stage I breast cancer.

The Base Case (1993–94 Canadian Practice)

The breast cancer submodel of POHEM is used as the reference against which ambulatory BCS and accelerated discharge post-mastectomy is evaluated. A detailed description of the breast cancer submodel of POHEM has been published by Will et al. (18;19). In summary, the treatment algorithms incorporated into POHEM vary according to the stage of breast cancer at the time of diagnosis and the woman's age (<50 and ≥ 50 years). These algorithms reflect recent Canadian breast cancer management patterns in terms of proportions of patients receiving surgical interventions, radiotherapy, or systemic therapy. Figure 1 provides details of the therapeutic options for women aged 50 and older with stage I breast cancer (the largest group of breast cancer patients). For this cohort, 70% receive BCS, and most of these (80%) undergo radiotherapy. Of the 30% of women requiring mastectomy, the model assumes that none receive radiotherapy. Similar algorithms have been generated for the other stages (II to IV) by age (<50 and ≥ 50 years) and are available upon request.

The length of stay (LOS) for BCS and mastectomy used in POHEM was determined from Statistics Canada's national person-oriented database of hospital discharges (POD) (1993–94) (15). To ensure that complications were taken into account, the number of hospital bed days was based on LOS 30 days prior to and 60 days after the hospitalization for the surgical procedure (either BCS or M). Hospital resource utilization was provided for Case Mix Groups (CMG) 429 to 430 (total mastectomy) and 432 and 433 (subtotal mastectomy) (5) by the Ontario Case Cost Project (OCCP) (13). The 1993–95 OCCP database contains detailed inpatient cost data collected for the abovementioned CMGs for 13 Ontario hospitals.

The hospital resource utilization, including inhospital physician assessments, was determined from the OCCP to be $855 for BCS. For women under 50 years of age undergoing mastectomy, the resources utilized cost $758 compared to $691 for women over 50.

Ambulatory BCS and Accelerated Discharge Post-Mastectomy

To estimate the increased spending required in the community to support a policy of ambulatory BCS and 2-day post-mastectomy discharge, we obtained community-based resource utilization data from the Renfrew Victoria Hospital. The Renfrew Victoria Hospital was

used since it was, at the time of this study, the only hospital in eastern Ontario that had fully adopted the approach of performing BCS and M on an outpatient basis. All patients with breast cancer are carefully prepared for surgery and ambulatory care through a preoperative admission clinic and are also provided close postoperative follow-up by both physicians and nurses.

Professional staff at the hospital undertook a chart review of all patients treated during fiscal 1996–97 to determine the proportion of women who were able to undergo ambulatory breast cancer surgery, the average LOS, the readmission rate, the type and amount of home care support provided, the usual postoperative surgical follow-up, and the medical supplies and analgesics required (personal communication, Nancy Kelly, Director of Nursing, Renfrew Victoria Hospital, August 1998).

Ninety-four percent of all patients undergoing BCS (or 48/51) were accepted for ambulatory surgery. All women had extensive presurgical counseling by a nurse. The LOS of the three women hospitalized for mastectomy was 2, 4, and 4 days. There were no readmissions during the period covered by the review for the management of postoperative complications. The only hospital resources utilized for postoperative recovery were related to the day surgery unit.

Although the retrospective review of cases from the Renfrew Victoria Hospital indicated that there were no readmissions following outpatient breast cancer surgery, a readmission rate of 5% was used in our model to allow for an anticipated low frequency of complications, which is consistent with the medical literature (1). Statistics Canada's 1993–94 POD was used to determine recent hospital LOS for BCS and M and for readmissions (15). The per-diem rate of $959 for outpatient breast surgery (1995–96) was extracted from data collected by the OCCP (13). A preoperative nursing assessment was added to this cost, for a total of $977 for the day surgery component.

Based on the use of community-based services from the Renfrew Victoria Hospital experience and on expert opinion, home care/postoperative follow-up costs were estimated to be $453 per patient for both BCS and M. This cost included some telephone follow-up and three postoperative home care visits, at a cost per visit for a registered nurse or nursing assistant of $36. In addition, the fees for three postoperative surgical assessments were included at a cost of $23 per visit, plus clinic overhead costs. It was assumed that these visits would include treatment of complications, such as the aspiration of fluid from seromas. Supplies (dressings, tape, etc.) and analgesics were each estimated to cost $10 per patient.

We made the following assumptions in estimating the potential economic impact of implementing this ambulatory/short stay breast cancer surgical strategy:

- 90% of patients with stages I and II breast cancer were eligible for ambulatory BCS or for 2-day hospitalization post-mastectomy (based on the Renfrew Victoria Hospital experience);
- Patients with stages III and IV breast cancer were not candidates for this approach;
- 10% of patients would have comorbid conditions or social circumstances that would make them ineligible for home-based postoperative care. For these individuals, the LOS was increased by 2 days above the current national average (based upon data from Statistics Canada's POD);
- The readmission rate for complications was set at 5%, with an ambulatory LOS of 6 days (based on data from Statistics Canada's POD); and
- The hospital cost for same-day surgery was estimated to be $959 (plus $18 for a half-hour preoperative nursing assessment and counseling).

Sensitivity Analyses

The purpose of a sensitivity analysis is to determine how robust the results are to changes in the assumptions. We performed the following sensitivity analyses:

- An increase in the readmission rate from 5% to 10%;
- An increase in the cost of home care by 50% and 100%; and
- An increase in the readmission rate to 10% and the cost of home care by 100%.

We also performed a "break-even analysis" to determine the point at which the ambulatory care strategy would be as costly as the current treatment approach, and therefore not a viable option.

All costs were determined in 1995 Canadian dollars. This economic analysis was performed from the perspective of the government as payer in a universal access healthcare system. For the ambulatory care strategy, it was assumed that the costs associated with diagnosis and staging would not be different from standard care, that there were no incremental postoperative costs except for home care and follow-up, and that there were no changes in treatment outcomes.

RESULTS

In 1995, there were 17,700 women diagnosed with breast cancer in Canada (12); 15,399 had stages I or II disease, making them potential candidates for treatment according to this ambulatory strategy. Undoubtedly, many of these women had their breast cancer surgery on an ambulatory basis or were discharged several days post-mastectomy. Nonetheless, the ambulatory LOS from the 1993–94 national database for women younger than age 50 undergoing BCS was 4.5 days, compared to 5.2 days for women 50 years or older. For M, the ambulatory LOS was 5.6 and 6.7 days, respectively (15).

Table 2 summarizes the details of the number of women with stages I and II breast cancer undergoing either BCS or M by age and stage in Canada who would be eligible for the ambulatory care approach. Seventy-seven percent of the women with breast cancer were age 50 or older, and almost 90% of all cases were either stage I or II at the time of diagnosis. For all women with stage I amd II cancer, 61.1% had BCS, compared to 38.9% who required or opted for mastectomy.

Table 3 compares the cost of "standard" therapy versus the cost of the home-based postoperative care strategy for those women treated with BCS or M, respectively. Data for women aged 50 or older with stage I cancer were used in this table, since this group represents the largest total number of cases in Canada. As shown in the table, the cost per case for BCS declined from $8,836 to $6,050 (31.5%) with home-based care, whereas the cost per case for mastectomized patients declined from $6,046 to $3,424 (43.4%).

Table 2. Number of Women with Breast Cancer in Canada by Age, Stage, and Initial Surgical Treatment (1995)

Stage	BCS	Mastectomy	Total
Age <50			
Stage I	1,498	375	1,873
Stage II	1,001	668	1,669
Total	2,499	1,043	3,542
Age ≥50			
Stage I	4,388	1,881	6,269
Stage II	2,515	3,073	5,588
Total	6,903	4,954	11,857
Grand total	9,402	5,997	15,399

Estimated total cases diagnosed in 1995: 17,700.

Table 3. Cost per Case of Initial Breast Cancer Therapy (Breast-conserving Surgery, n = 4,388, and Mastectomy, n = 1,881) Stage I Women >50 Years in 1995 Can $

	Base case ($)		Ambulatory care (BCS) or early discharge strategy (M) ($)		Ineligible women ($)	
	BCS	M	BCS[a]	M[b]	BCS[c]	M[d]
Diagnosis/staging	471	471	471	471	471	471
Surgery	666	707	666	707	666	707
Inpatient hospitalization	4,447	4,644	0	1,382	6,156	6,026
Day Surgery + Counseling	0	0	977	187	0	0
Readmissions	0	0	231	0	0	0
Radiotherapy (average)	3,094	0	3,094	0	3,094	0
Adjuvant therapy (aver.)	158	224	158	224	158	224
Home care/surgical follow-up	0	0	453	453	0	0
Cost per case	8,836	6,046	6,050	3,424	10,545	7,428

[a] Ambulatory care strategy assumes 90% of patients with stage I cancer would receive 0 days of hospitalization, with a 5% readmission rate, averaging 6 days in hospital.
[b] Early discharge strategy assumes that for 90% of patients with stage I cancer, ALOS would be 2 days, with a 5% readmission rate, averaging 6 days in hospital.
[c] Assumes 10% would be ineligible for ambulatory care strategy and length of stay would increase by 2 days above the current national average.
[d] Assumes 10% would be ineligible for early discharge strategy and would spend two additional days in hospital above the current national average.

The cost components of initial treatment for the base case and for the ambulatory care strategy are shown in Table 4. The economic burden of the initial treatment of women with stage I and II cancer diagnosed in 1995 was estimated to be $127.6 million, with hospitalization for breast cancer surgery comprising 53% of the costs. Assuming 90% eligibility for home-based postoperative care, a 5% readmission rate, and home care costs of $453 per patient, the acute care cost of initial breast cancer management could be reduced by $47.2 million, with an investment in home care of $14.5 million, resulting in an overall net saving of $33 million. Under this strategy, the total cost of initial breast cancer care would be $94.6 million, with hospitalization, home care, and day surgery contributing to 21%, 6%, and 9% of the total, respectively. The adoption of an ambulatory care strategy for breast cancer postsurgical management would result in a saving of $20.3 million for BCS alone and $12.7 million for M.

Table 5 shows the results of the sensitivity analyses that were done. Even with the worst-case scenario (10% readmission rate and home care costs of $906), there would still

Table 4. Comparison of Cost Components of Initial Treatment, Stages I and II

	Base case (%)	Cost reduction strategy (%)
Diagnosis/staging	6.0	9.0
Surgery	8.0	11.0
Hospitalization	53.0	21.0
Radiotherapy	25.0	33.0
Chemotherapy	6.0	9.0
Hormonal therapy	2.0	2.0
Home care	0.0	6.0
Day surgery	0.0	9.0
Total percent	100.0	100.0
Total cost (millions)	$127.6	$94.6

Table 5. Sensitivity Analyses for Various Assumptions[a]

	Readmission rate (%)	Cost of home care ($)	Total cost ($ million)	Total saving ($ million)	% saved
Base case	—	—	127.6	—	—
1[a]	5.0	453.00	94.6	33.0	25.9
2[a]	5.0	680.00	97.7	29.9	23.4
3[a]	5.0	906.00	100.8	26.7	20.9
4[a]	10.0	453.00	97.9	29.7	23.3
5[a]	10.0	680.00	101.0	26.5	20.8
6[a]	10.0	906.00	104.1	23.4	18.3
Break-even point[b]— 38.4% eligible	5.0	453.00	127.6	0	0

Numbers may not add due to rounding.
[a] Sensitivity analyses assume proportion of women eligible for reduced LOS is 90%, and cost of hospital component for day surgery is Can $977.00.
[b] Break-even point (point at which the reduced LOS intervention no longer results in a savings) occurs when only 38.4% of women are eligible for the intervention.

be a savings of $23.4 million, or 18.4%. A break-even analysis indicated that the ambulatory care approach would continue to be cost-effective until the proportion of women eligible for the reduced LOS was reduced to 38.4%.

DISCUSSION

This analysis was undertaken to estimate for Canada the potential savings in the acute care setting and the required investment in a home care setting of a change in surgical practice and postoperative care that has already been widely adopted in a number of other countries (1;3;10). The analysis clearly points to major potential savings. Three issues need to be discussed in relation to these results. First, is it possible to extrapolate the practice of a 50-bed community hospital to the entire Canadian context? Second, is the quality of care better or worse for the early-discharge patients? Third, given the funding structure of the Canadian healthcare system, is it feasible to shift resources from the acute care sector to the home care sector in a coordinated fashion?

Extrapolation of the Results

The resource utilization and the patient profiles of the Renfrew Victoria Hospital are specific to this hospital and cannot by themselves be generalized to the entire Canadian system. However, studies performed in other countries indicate similar outcomes and potential savings.

Edwards et al. (7) from the M. D. Anderson Cancer Center in Houston reported as early as 1988 on the economic impact of the introduction of same-day admissions and early postoperative discharge for mastectomy patients and noted a reduction in hospital charges of 39%, from $4,967 to $2,981. The authors noted that this change in medical practice required changes in outpatient nursing responsibilities, with more patient education and written instructions for home care regarding surgical wounds and drainage catheters.

In 1993, Goodman and Mendez (8) reported a retrospective review from Florida of 221 patients who underwent definitive surgical procedures for breast cancer entirely on an ambulatory basis. Their series included 31 patients treated with modified radical mastectomies, 101 with partial mastectomies and radical axillary dissections, and 11 total mastectomies. They reported no serious complications, no hospital readmissions, and no wound infections.

Bonnema et al. (1) from the Netherlands recently reported the results of a randomized trial of short versus long postoperative hospital stay in 125 patients with operable breast

cancer. Those in the short-stay arm were discharged on the morning of the fourth postoperative day with a surgical drain in place. Those in the long-stay arm were discharged after removal of the surgical drain. The total cost of care from a societal perspective was reduced by about $1,320 per patient with the short-stay program, even though there was a need for more professional home care (2). They did not find that there was an increased need for outpatient consultations or for greater intensity of informal home care or out-of-pocket patient expenses.

Even though these studies are not direct proof of the potential generalizability to all of Canada of the results of our analysis, they do provide support for potential savings in very different hospital settings. In this context, we consider that our analysis provides a reasonable estimate of potential savings of an outpatient/early discharge approach for BCS and M.

Quality of Care

No comprehensive measure of the quality of care or the quality of life of patients was made during either the chart reviews or from the regular data collection practice at the Renfrew Victoria Hospital. However, the quality of care was ensured by extensive presurgical counseling by a nurse and through community-based services offered by the hospital. An objective measure of the quality of care was obtained through the readmission rate. The fact that there were no readmissions for women who underwent ambulatory breast cancer surgery is an indication that a high level of care was provided. Patient satisfaction was not measured and cannot be inferred directly from this study. However, other studies incorporated it directly and found it to be high.

In their 1993 retrospective review of 221 patients who underwent definitive surgical procedures for breast cancer entirely on an ambulatory basis, Goodman and Mendez (8) reported high patient compliance and a high level of patient satisfaction. In the randomized trial of Bonnema et al. (1), there were no significant differences in duration of drainage from the axilla between the short- and long-stay groups (median 8 vs. 9 days respectively, $p = .45$), or the incidence of wound complications. The median number of seroma aspirations was actually significantly higher in the long-stay group (3.5 vs. 1, $p = .04$). The two groups did not differ in scores for psychological problems, and patient satisfaction with the short stay was high. Only 4% (2/50 patients) at 1 month indicated a preference for a longer hospital stay. These investigators did not find that there was an increased need for outpatient consultations or for greater intensity of informal home care support or out-of-pocket patient expenses. McManus and colleagues (11) as well as Burke et al. (4) not only found that patients had a high level of satisfaction with ambulatory surgery, but also experienced faster healing and recovery at home within the family milieu. It therefore seems possible not only to reduce the cost of treatment but, with appropriate investment in home care, to provide a better quality of care with higher patient satisfaction.

Can Resources Be Shifted?

During the 1980s and early 1990s, it was very difficult in Canada to shift resources between the acute care and the community-based components of the healthcare sector, because thay were funded and managed independently. However, since the mid-1990s there has been extensive restructuring and increased regionalization of the management of the healthcare system throughout the country. This restructuring provides the opportunity, as yet not fully achieved, of transferring resources between components of the healthcare system. For example, in most of the Canadian provinces, regional health authorities have been established. These health authorities oversee and are accountable for the entire public healthcare delivery system for a region and, to varying degrees, have the authority to allocate or influence the

allocation of resources to the acute care and community care setting, according to perceived need. This evolving structure makes it possible to put forward proposals that involve the redistribution of resources among the different components of the healthcare delivery system.

We perceive the shift to ambulatory surgery for breast cancer to be a positive one, from the perspective of the hospital, the physician, and the patient. For patients, the convenience of returning to their own homes sooner is generally perceived positively as they return to a familiar environment and the support of family and friends. For physicians, ambulatory surgery is often more easily scheduled and requires less on-site follow-up (10). Hospitals see day surgery as a cost-containment strategy. Caution should be exercised, however, to ensure that strategies such as this one do not transfer the burden of care to the families of patients.

POLICY IMPLICATIONS

The cost reduction associated with a nationwide adoption of outpatient/early discharge management of stages I and II breast cancer, along with the opportunity to offer patients a more satisfying treatment option, would be Can $33 million. The required shift in operating costs from hospitals to a home-based program would be $14.5 million dollars. Reducing the length of inhospital stay for patients can result in decreased hospital expenditures or in reallocation of resources to other high-priority care needs. However, as is evident from this analysis, this would only be possible with increased investment in home care services.

This analysis focused on estimating the potential cost savings after the transition to ambulatory or reduced LOS surgery for breast cancer. Before such a program could be fully implemented, the costs associated with the transition and the capacity of the home care component of the healthcare system to absorb this additional burden would need to be evaluated. In addition, it is imperative to provide education and counseling to patients prior to and after surgery to reduce the chance of misunderstandings, apprehension, and complications. For breast cancer surgery, this involves counseling patients (preferably one-on-one) on issues such as the management of surgical drains and the optimal use of analgesics. These measures, as well as streamlined administrative procedures and an evaluation program for accelerated surgical stay programs, are well described by Pedersen et al. from the Centre for Cost-effective Care in Boston (14). Institutions planning a program of ambulatory breast cancer surgery would be well advised to review the strategies recommended in this article.

Finally, ambulatory surgery or accelerated discharge programs are not appropriate for all breast cancer patients. There are individuals with significant comorbid conditions or social circumstances for whom early discharge would be inappropriate. In addition, care should be taken in extrapolating the savings documented from this study to the current context. The data used in this report on average length of stay (ALOS) are based on fiscal year 1993–94. The restructuring of the health care system in Canada may have already led to increased use of ambulatory surgery and an impact on the ALOS of breast cancer patients. However, if LOS was reduced by just 1 day from the national average in 1993–94, the potential overall net saving of $33 million would be reduced to $22 million, which is still considerable.

The re-engineering of the healthcare system across Canada has resulted in the devolution of healthcare responsibilities to regional health authorities. Cost reduction programs should be implemented according to the needs of regional health authorities and should be sensitive to community needs. Ideally, prospective randomized studies should be conducted to evaluate the costs and benefits of accelerated surgical stay programs in individual communities. However, even in the absence of prospective trials, it is important that mechanisms be put in place to ensure that any shift of scarce healthcare resources occurs in such a way as to enable optimal health outcomes to be achieved.

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